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# Catalyst 1900 Series

## Product Overview

The Catalyst(r) 1900 series switches deliver the industry's best value for today's Ethernet networks. For an extremely low price per port, these switches provide a dedicated 10-Mbps of bandwidth to the desktop and high performance connectivity between hub-based workgroups.

All Catalyst 1900 series switches offer unrivaled ease of use through an intuitive and comprehensive Web-based management interface. Standard Edition switches are upgradeable to provide unmatched flexibility and scalability when combined with Enterprise Edition software. Enterprise Edition software enables these switches to deliver unmatched network configuration flexibility and scalability through embedded Cisco technologies, delivering comprehensive management and security, bandwidth optimization, networked multimedia, and virtual LAN (VLAN) support. The Enterprise Edition software is pre-installed in Enterprise Edition switches, and available as an Upgrade Kit for Standard Edition switches.

## Key Features and Benefits

### Standard Edition Feature Summary

- Software upgradeable to Enterprise Edition
- 4 models with 12 or 24 10BaseT ports and choice of 2 100BaseT uplinks
- Full-duplex operation on all Ethernet and Fast Ethernet ports
- Auto-negotiation on 100BaseTX ports for automatically selecting half-and full-duplex operation
- Congestion control features including IEEE 802.3x-based flow control, and back-pressure based flow control on 10BaseT ports
- Web-based network management
- Reduced footprint: only 8.25 inches deep

### Performance

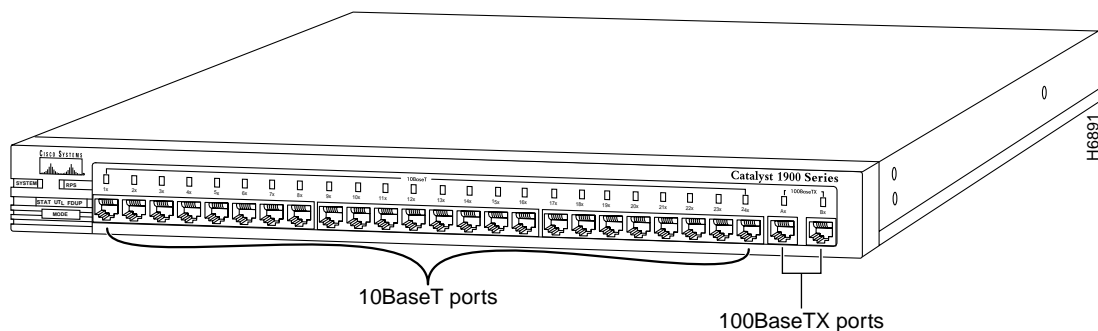
- Twelve or twenty-four 10BaseT ports deliver dedicated 10 Mbps of bandwidth to individual users or workgroups to support bandwidth-intensive applications
- Two 100BaseT ports eliminate bottlenecks to servers and other network devices
- One switched Attachment Unit Interface (AUI) port for connecting to fiber or legacy 10Base2 or 10Base5 networks
- Shared-memory architecture with 3-MB packet buffer virtually eliminates packet loss
- Non-blocking, ClearChannel architecture supports wire-speed bridging on all ports, delivering up to 370 Mbps maximum forwarding bandwidth, and 550,000 pps aggregate
- CollisionFree full-duplex operation on switched 10BaseT and 100BaseT ports delivers up to 200 Mbps of bandwidth to end stations, servers and between switches
- Choice of congestion control options for applications that require zero packet loss:
- Enhanced congestion control accelerates packet forwarding when the switch buffers are full
- Back-pressure on half-duplex Ethernet ports throttles network transmission using the IEEE 802.3 Layer 2 back-off algorithm
- IEEE 802.3x flow control on 100BaseTX ports provides intelligent flow management between switches and between a switch and a server
- Per-port broadcast storm control prevents faulty end stations from degrading overall system performance with broadcast storms
- Choice of cut-through or store-and-forward switching lets administrators optimize for performance or error checking

- Security and Redundancy
- IEEE 802.1d Spanning-Tree Protocol support for redundant backbone connections and loop-free networks simplifies network configuration and improves fault tolerance
- User-selectable address learning mode simplifies configuration and enhances security
- Support for optional Cisco 600 watt redundant AC power system provides a backup power source for up to four units for improved fault tolerance and network uptime
- Flexible Network Configuration
- No per-port Media Access Control (MAC) address limitations--provides flexibility to connect to individual users or shared hubs. Support for 1024 MAC addresses on the Catalyst 1900 allows the switch to scale with a growing network
- Configurable network port that supports unlimited MAC addresses for backbone connectivity

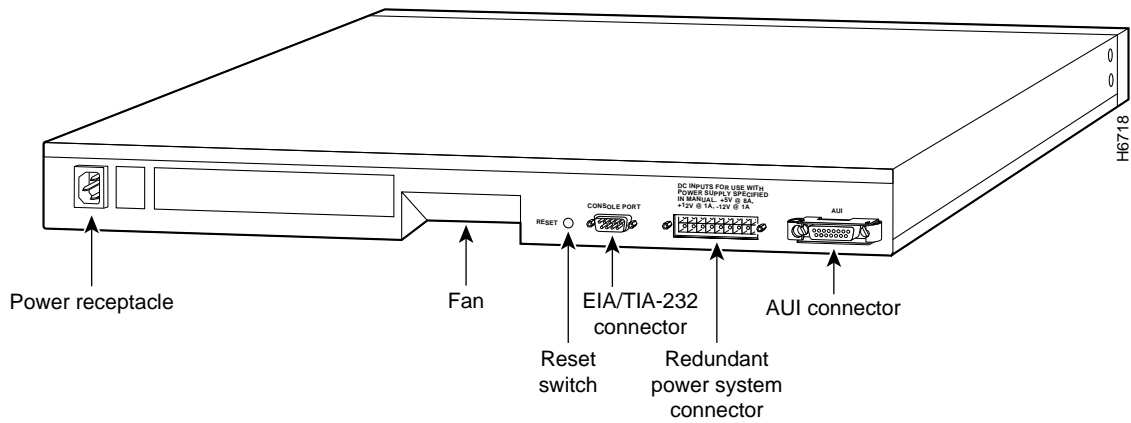
## Management

- Simple Network Management Protocol (SNMP) and Telnet support delivers comprehensive in-band manageability, and a menu-based management console provides in-depth, out-of-band manageability
- Supports 4 groups of embedded RMON (history, statistics, alarms, and events). Support for all nine RMON groups through use of a SwitchProbe Analyzer port that permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe (Enterprised Edition only).
- Web-based secured interface allows users to configure and manage the switch from any client on the Internet with a web-browser.
- Cisco Discovery Protocol (CDP) enables a CiscoWorks network management station to automatically discover the switch in a network topology
- Autonegotiation on 100BaseTX ports automatically selects half- or full-duplex transmission mode to optimize bandwidth

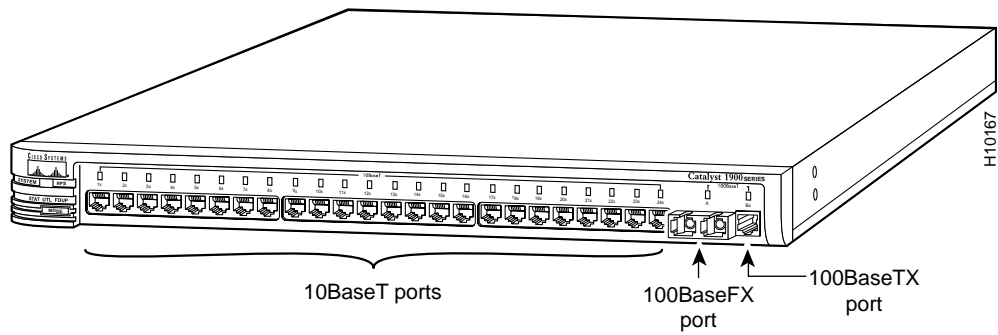
**Figure 1**      **Figure 7-25: Catalyst 1900 Front View**



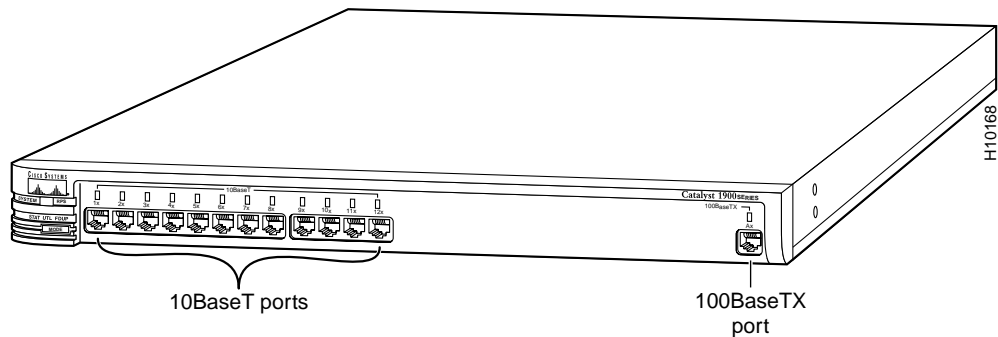
**Figure 2**      **Figure 7-26: Catalyst 1900 Rear View**



**Figure 3**      **Figure 7-27: Catalyst 1900C Front View**



**Figure 4**      **Figure 7-28: Catalyst 1912 Front View**



## Specifications

### Hardware

**Table 1**      **Table 7-20: Catalyst 1900 Specifications**

Characteristic	Description
Performance	1-Gbps bus
	370-Mbps maximum forwarding bandwidth
	3-MB packet buffer memory dynamically shared by all ports

Characteristic	Description
Selectable switching option	FragmentFree cut-through-forward after collision window (64 bytes) Store and forward--forward after packet receipt
Packet forwarding rate for 64-byte packets	14,880 packets per second (pps) to 10-Mbps ports 148,800 pps to 100BaseT module ports Up to 100,000 pps to FDDI module ports Up to 550,500 pps aggregate
Latency (FragmentFree cut-through switching mode)	70 microseconds between 10BaseT ports 11 microseconds between 100BaseT ports
MAC addresses	1024 per system (Catalyst 1900 series) Unlimited MAC address support on configurable network port
Management	SNMP Management Information Base (MIB) II, SNMP MIB extensions Station Management (SMT) 7.3, FDDI MIB, Bridging MIB (RFC 1493)
Standards	IEEE 802.3x full duplex on 10BaseT and 100BaseT ports IEEE 802.3x flow control on 100BaseT ports IEEE 802.1d Spanning-Tree Protocol IEEE 802.3u 100BaseTX and 100BaseFX specifications IEEE 802.3 10BaseT specification IEEE 802.3 AUI specification ATM Forum LANE 1.0; UNI 3.0/3.1; RFC 1483
Connectors and Cabling	10-Mbps ports: RJ-45 connectors; two-pair Category 3, 4 or 5 UTP cabling; DB15 connector on AUI port 100BaseTX ports: RJ-45 connectors; two-pair Category 5 UTP cabling 100BaseFX port: SC connector, 50/125- and 62.5/125-micron multimode fiber-optic cabling Management console port: RJ-45 connector Rack mount kit included
Indicators	Per-port status LEDs—Link Integrity, Disabled, Activity, and Full-Duplex indications System status LEDs—System, RPS, Module Enabled, and bandwidth utilization indications
Dimensions	1.73 x 17.5 x 8.25 in (4.39 x 44.45 x 21 cm)
Weight	7 lb. (3.2 kg)

**Table 2                      Table 7-21: Environmental Conditions and Power Requirements**

Characteristic	Description
Operating temperature	23 to 113°F (–5 to 45°C)
Operating relative humidity	10 to 95% noncondensing
Operating altitude	Up to 9842 ft. (3000 m)
Power consumption	50W (Catalyst 1900)
AC input voltage/frequency	90 to 127/200 to 250 VAC (auto-ranging) 50 to 60 Hz
Safety and Electromagnetic Emissions Certifications	UL 1950 CSA 22.2 No. 950 EN 60950 IEC 950 FCC Part 15 Class A, verified to Class B CE Marking EN 55022B Class B VCCI Class II

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## Software

For information about the Enterprise Edition Software, “Enterprise Edition Software for the Catalyst 2820 and Catalyst 1900 (r) Series.”

## Ordering Information

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All base units include 1 year limited return to factory warranty.

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## Product and Part Numbers

**Table 0-3      Part Numbers for the Catalyst 1900 Series**

<b>Part Description</b>	<b>Part Number</b>
Catalyst 1900 Standard Edition with 12 switched 10BaseT ports, two 100BaseTX ports, and 1024 MAC address cache. Software upgradeable to Enterprise Edition.	WS-C1912-A
Catalyst 1900 Enterprise Edition with 12 switched 10BaseT ports, one 100BaseTX port, and 1024 address cache	WS-C1912-EN
Catalyst 1900 Standard Edition with 12 switched 10BaseT ports, one 100BaseTX port, one 100BaseFX port, and 1024 MAC address cache. Software upgradeable to Enterprise Edition.	WS-C1912C-A
Catalyst 1900 Enterprise Edition with 12 switched 10BaseT ports, one 100BaseTX port, one 100BaseFX port, and 1024 address cache	WS-C1912C-EN
Catalyst 1900 Standard Edition with 24 switched 10BaseT ports, two 100BaseTX ports, and 1024 MAC address cache. Software upgradeable to Enterprise Edition.	WS-C1924-A
Catalyst 1900 Enterprise Edition with 24 switched 10BaseT ports, two 100BaseTX ports, and 1024 address cache	WS-C1924-EN
Catalyst 1900 Standard Edition with 24 switched 10BaseT ports, one 100BaseTX port, one 100BaseFX port, and 1024 MAC address cache. Software upgradeable to Enterprise Edition.	WS-C1924C-A
Catalyst 1900 Enterprise Edition with 24 switched 10BaseT ports, one 100BaseTX port, one 100BaseFX port, and 1024 address cache	WS-C1924C-EN
Pack of 5 Catalyst 1924 Enterprise Edition Ethernet Switches	WS-C1924-EN-5PACK
Pack of 5 Catalyst 1924C Enterprise Edition Ethernet Switches	WS-C1924C-EN-5PACK
<b>Enterprise Edition Software</b>	
Catalyst 1900/2820 Enterprise Edition Upgrade Kit	WS-C19/28EEUG
Catalyst 1900/2820 Enterprise Edition Upgrade Kit 10 licenses	WS-C19/28EEUG10
<b>Service and Documentation</b>	
SMARTnet maintenance contract	See the “Service and Support” chapter.
Documentation	See the “Documentation” chapter.

## Services and Support

All Catalyst 1900 series switches come with a one year limited return to factory warranty that can be extended for a total of three years. SMARTnet and Comprehensive Support Packages are both available. Support options range from help desk assistance to proactive, onsite consultation. All support contracts include major Cisco IOS software updates, full access rights to Cisco Connection Online, and 24-hour-a-day technical assistance. Contact your local sales office for further information.

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## Documentation

For the Catalyst 1900 Series Installation and Configuration Guide, the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/28201900/28ic/index.htm>

For the Enterprise Edition Software guide, see the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/28201900/00/index.htm>